Monitoring and Diagnosis of Diurnal, Intraseasonal and Interannual Variability of Precipitation Associated with the North American Monsoon System

Figure 1: *Daily mean sea surface temperature (^{o}C) for May 15, 2004, as defined by the Multi-Platform Merged (MPM) SST analysis.*

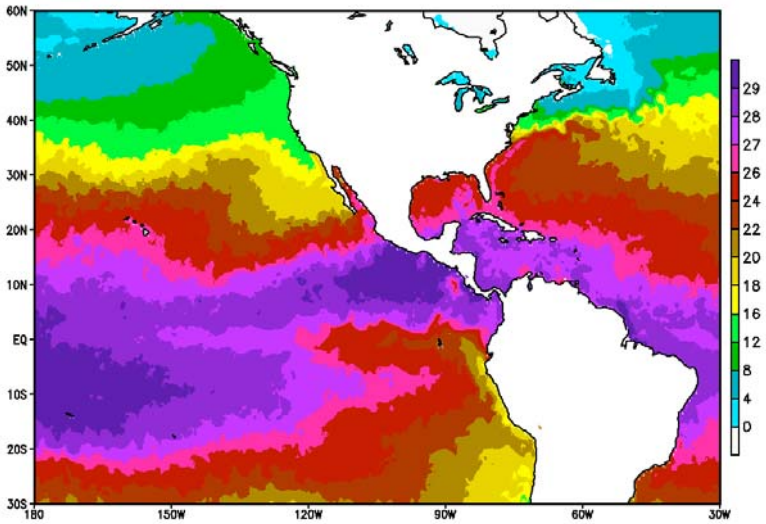

Figure 2: *Time series of the 3-hourly sea surface temperature (^{o}C) at a 0.25^{o}lat/lon grid box centered at (109.875^{o}W, 26.125^{o}N) as defined by the Multi-Platform Merged SST (MPM) analysis, for the entire data period from May 15 – September 30, 2004 (top) and for a sub-period of 10 days from July 1 – 10, 2004 for careful inspection (bottom). Dot inside the map inserted in the top panel indicates the location of the 0.25^{o}lat/lon grid box whose time series are displayed.*

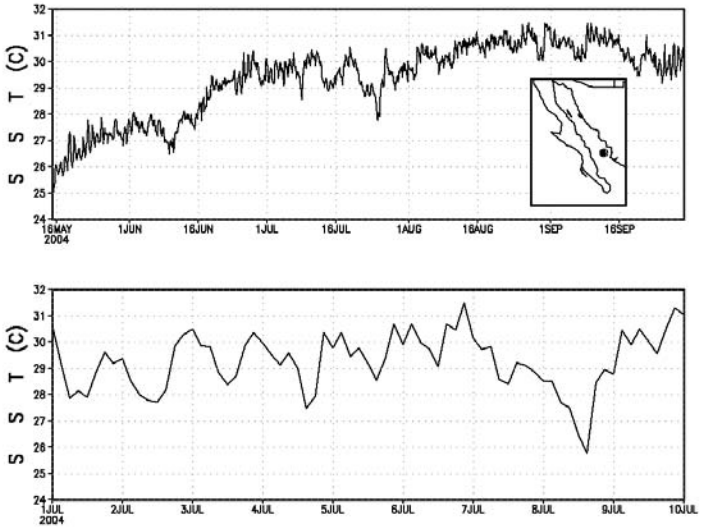

Figure 3: *Topography [m] of the target area of this study.*

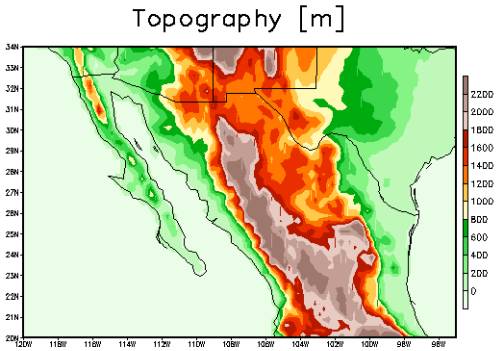

Figure 4: *Distribution of the 6-month mean cloudiness for low (top left), middle (top right), and high (bottom left) clouds, and precipitation (mm/day) over the target domain.*

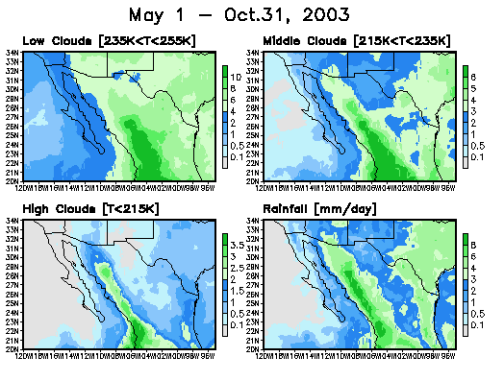

Figure 5: *Distribution of 3-hourly mean precipitation (mm/day) over the 6-month period from May to October, 2003.*

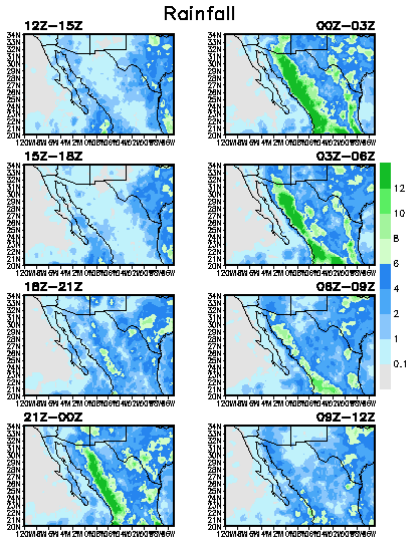

Figure 6: *Diurnal cycle of precipitation (black) and cloudiness for high (blue), middle (green) and low clouds (red) averaged over a spatial domain from 22°N-32°N, 5° west and east to the crests of the Sierra Madre Occidental mountain range for summers of 2003 (bottom) and 2004 (top).*

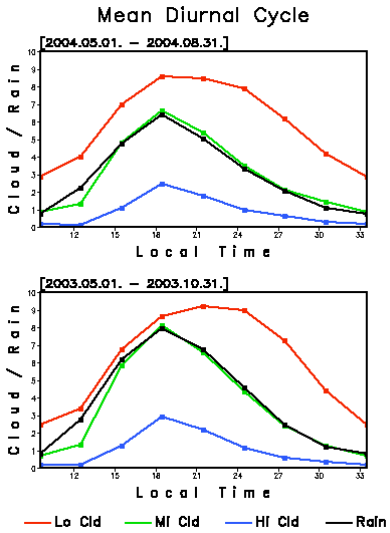

Figure 7: *Time series of precipitation (mm/day) averaged over a spatial domain from 22°N-32°N, 5° west and east to the crests of he Sierra Madre Occidental mountain range for summers of 2003 (middle) and 2004 (bottom). The top panel shows the results for a sub-period of 6 days, while the bottom panel presents time series for the entire period.*

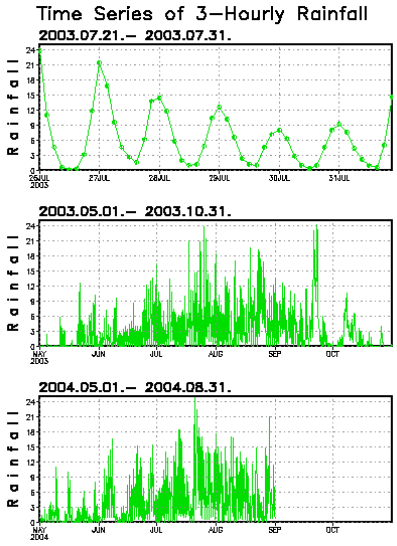

Figure 8: *East-west section of 3-hourly mean cloudiness averaged from 22°N to 32°N relative to the crests of the Sierra Madre Occidental mountain range, together with the mean elevation (bottom).*

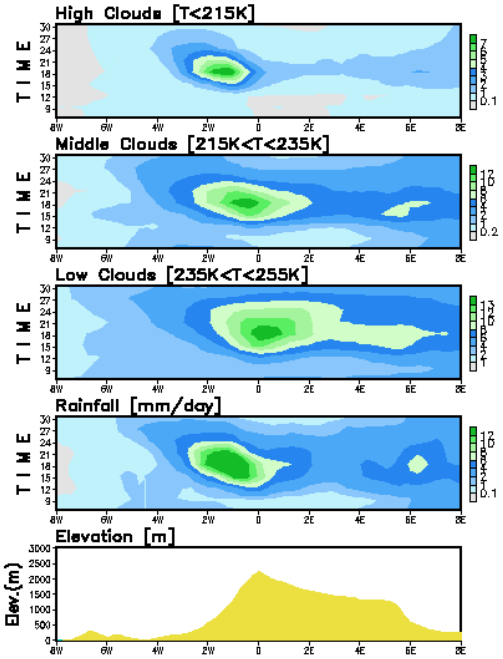

Figure 9: *East-west section of 24-hourly mean cloudiness averaged from 22°N to 32°N relative to the crests of the Sierra Madre Occidental mountain range, together with the mean elevation (bottom).*

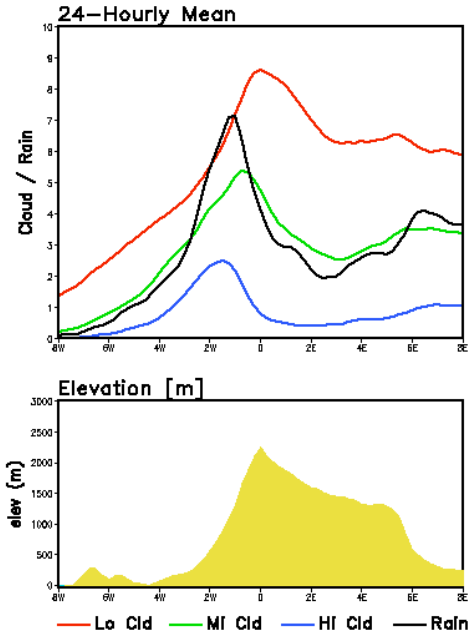

Figure 10: *Height-longitude section of mean precipitation observed by the TRMM PR for a 6-month period from May to October 2003. Precipitation is averaged from 22°N to 32°N relative to the crests of the Sierra Madre Occidental mountain range.*

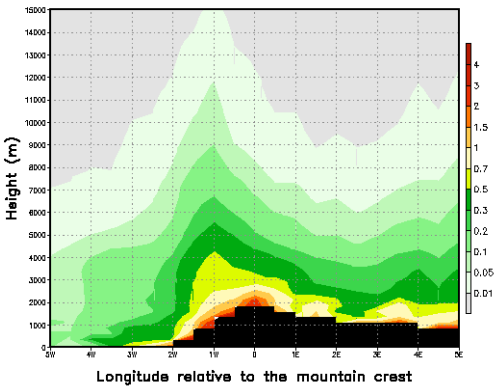

Figure 11: *Correlation between the diurnal cycle intensity of precipitation over the North American Monsoon System (NAMS) core monsoon area [105°W-110°W; 25°N-30°N] and that of the sea surface temperatures (SSTs) over the adjacent oceans for a period from May 15 – September 30, 2004. The diurnal cycle intensity of precipitation and SST is defined as the diurnal standard deviation from daily mean of corresponding 3-hourly values from CMORPH precipitation estimates and the MPM SST analysis, respectively.*